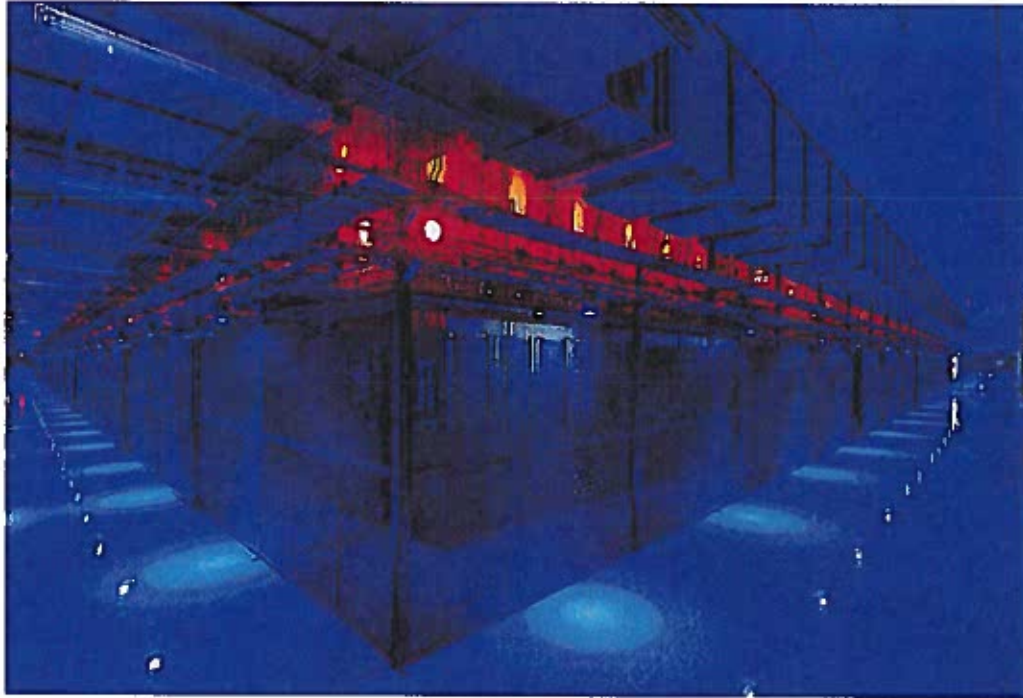


The Top 10 Cloud Campuses

BY RICH MILLER - NOVEMBER 23, 2015 1 COMMENT



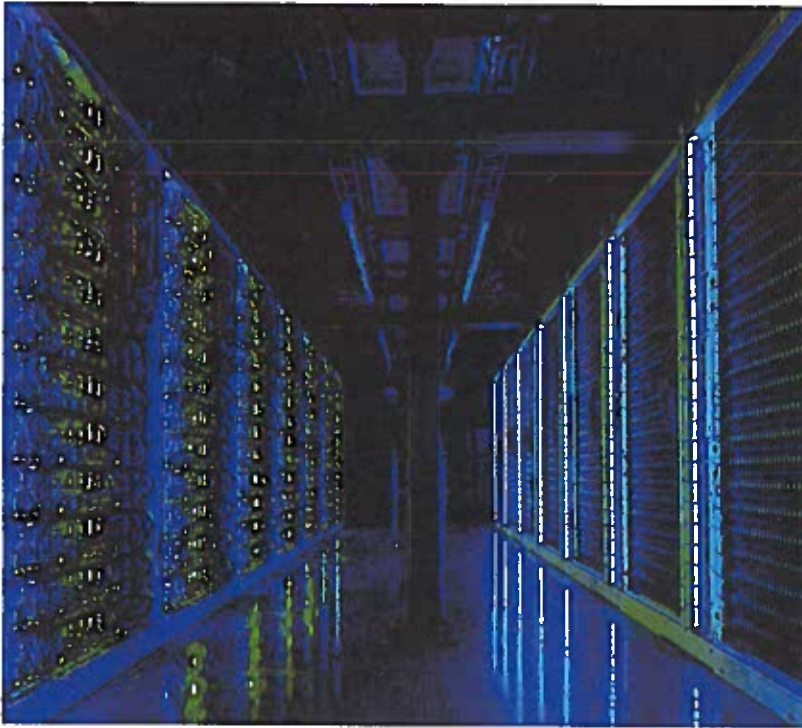
Cages full of server cabinets inside SUPERNAP 7 in Las Vegas, which anchors one of the largest cloud campuses. (Photo: Switch SUPERNAPS)

Today we provide a look inside the **Top 10 Cloud Campuses**, the places where the cloud resides. Cloud campuses is our term for the sites where technology titans concentrate massive amounts of computing power in multiple data center facilities. These huge campuses are where the cloud lives – the physical manifestation of the Internet, often located in rural areas offering cheap land and power. Data center hubs enable companies to rapidly add server capacity and electric power, creating economies of scale as more workloads migrate into these massive server farms.

As cloud computing gains momentum – driven by social networks, Big Data and the Internet of Things – the scale of these facilities will grow ever larger. It has become routine for companies like Apple, Google, Facebook and Microsoft to invest more than

\$1 billion in a single location where they place a **cloud campus**. So here's a look at our take on the Top 10 Cloud Campuses:

1. Switch SUPERNAP Campus (Las Vegas)



High density racks of servers inside the SUPERNAP 7 in Las Vegas, one of the three huge data center buildings on the massive Switch campus, home to 120 cloud service providers and managed hosting firms. (Photo: Switch)

Nobody builds bigger than Switch, the creator of the massive **SUPERNAP campus** in Las Vegas. The original SUPERNAP was a pioneer in hyperscale computing, spanning more than 400,000 square feet and featuring the design vision of Switch founder Rob Roy. Innovations in airflow containment and multi-mode cooling helped establish the SUPERNAP as a leading destination for high-density computing, supporting workloads up to 1,500 watts per square foot. Switch has added two more huge SUPERNAP buildings, expanding the campus to more than 1.4 million square feet of data center capacity. At full build-out, the Vegas campus will support 280 megawatts of IT capacity. Although its primary business is colocation, Switch has become an increasingly important player in cloud computing, with more than 120 cloud or managed

service providers as customers. Even bigger cloud campuses lie ahead. Switch has announced plans for a 2 million square foot campus near Grand Rapids, Michigan and a 6.4 million SF development in Reno that will be the world's largest data center campus.



House Committee on Tax Policy:

I am writing to lend Joyent's strong support of the proposed data center legislation regarding sales, use and personal property tax that is in front of you today.

Joyent specializes in application virtualization and cloud computing services, delivering container-native infrastructure, offering organizations high-performance, yet simple public cloud and private cloud software solutions for today's demanding real-time web and mobile applications.

You may have heard recently about west coast companies who have turned their attention to Michigan, due to the legislation you are considering. As a San Francisco based company and a current client of Switch, we know firsthand that Switch is the globally recognized leader in data center design and operations. Switch's strategic move to pursue locating its eastern U.S. expansion to Michigan brought our attention to your state as well.

As you may know, Data Center Frontier recently rated Switch the number one cloud campus in the country, ahead of some of the largest competitors in the industry. For Joyent, being co-located within the number one rated cloud campus makes strong business development sense, builds on our current relationship with Switch and ensures we can grow and continue to provide the most reliable, safest and cutting edge service to our customers.

The passage of the data center legislation is a critical step for Michigan to create parity with its neighboring states. I am writing today because Joyent believes it is a necessary component of our decision making process to locate and expand in Michigan.

Sincerely,

Scott Hammond
CEO
Joyent, Inc.

cc: Jeff Farrington, Tax Policy Committee Chairman
Kevin Cotter, Speaker of House
Tom Leonard, Speaker Pro Tempore
Aric Nesbitt, Majority Floor Leader
Tim Greimel, Democratic Leader
Sam Singh, Democratic Floor Leader



19520 Jamboree Road
Suite 110
Irvine, California 92612

Senate Competitiveness Committee:

I write this letter in support of the proposed data center legislation regarding sales, use and personal property tax that is in front of you today.

Synoptek provides information technology management services and support to organizations worldwide. We offer attainable solutions to manage and operate information technology (IT) infrastructure using our advanced IT service management capabilities, automated toolsets, and skilled technologists. Our trusted team of IT professionals provides superior end user and device management support to improve your business performance and success.

A key part of our ability to deliver incredible services is based on the data centers we choose to locate our infrastructure. Switch is the globally recognized leader in data center design and operation, which is why upon hearing of their potential expansion to Michigan I immediately reached out to their team.

Michigan is not a market we've thought of before for our data center presence but with Switch and its history of high levels of bandwidth and strong carrier cooperation choosing the state, as well as its proximity to the eastern United States, Michigan is now a strong candidate for our east coast presence.

The passage of data center legislation that creates parity with neighboring states is key to Synoptek or any other of the 1,000 plus companies that work with Switch choosing to locate in Michigan.

Thank you,

A handwritten signature in black ink, appearing to read 'Tim Britt', written over a horizontal line.

Tim Britt
CEO, Synoptek
19520 Jamboree Road #110
Irvine, CA 92612

cc: Senator Mike Shirkey, Competitiveness Committee Chairman
Brian Calley, Lt. Governor
Arian Meekoh, Majority Leader
Jim Ananich, Minority Leader

OST: Open Systems Technologies
C/o: Meredith Bronk & Jim VanderMey
605 Seward Ave NW
Grand Rapids, MI 49504

November 30, 2015

The Honorable XXXXXXX
State Representative
State Capitol
P.O. Box 30014
Lansing, MI 48909-7514

Subject: Passage of HB 5074, 5075 & 5076

Dear Representative XXXXX:

We write you today in regards to HB 5074, 5075 & 5076 which are currently in the House Tax Policy Committee and aim to provide tax exemptions for data center companies in the State of Michigan. While OST (Open Systems Technologies) does not own any such entities and therefore would not be directly impacted by the passage of such legislation, we nonetheless strongly urge the Michigan Legislature to pass these bills.

The economic impact of such investments by data center operators, such as the Switch SuperNAP, are immense and would have a net positive impact on our state. While the stated 10-year investment plans of Switch here in Michigan cannot be ignored – approximately \$5 billion into “The Pyramid” campus with about 1,000 employees to work onsite, we feel there is more to this story. The reality is that these types of businesses are driving the new economy here in the United States. They are, in every sense of the phrase, an industrial park for the new economy as more and more corporations look to invest in off premise, co-location data centers and cloud services. As a company that provides many services of this nature to companies all over the nation, OST can attest to the accelerated pace of such strategies. It would be a shame to see the legislature here in Michigan deny the opportunity for Michigan to once again innovate and lead within a major new industry growth, just as we did a century ago in the automotive manufacturing boom.

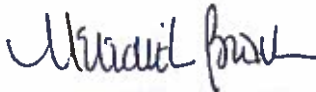
In addition to the above we believe that the following are also reasons to support passage of such legislation here in Michigan:

- A growing reliance on cloud computing is boosting demand for leased data center space in the U.S. In fact, there are 17 other states who have responded by creating economic incentives to recruit these data centers.

- The ecosystem that has sprung up around these facilities to support and sell into not only the data centers, but all of their clients, are incredibly impressive. There are countless tech warehouses within close range whose primary business are data centers and their clients.
- OST is already seeing that the State of Michigan, and West Michigan specifically, continue to evolve as a design hub. Currently, the design industry in the state is largely tied to the office furniture and automotive industries, but as design and technology continue to be interlaced with one another, Michigan will become more attractive to new job providers and talent. This legislation would be a direct accelerant to this as other service-based companies look to invest.
- Companies such as Switch have a proven track record of making philanthropic investments in collaborative workspaces which drive innovation around this "new economy" ecosystem in areas such as startup incubation, education, talent, and more. These can be standalone subsidiaries as well as partnerships with colleges and universities.
- The jobs created by such entities are typically better paying and have a ripple effect by attracting other technology companies to the state who want to be near the new data centers.
- Finally construction jobs needed to complete the builds-out of these types of projects would have an immense impact.

In closing, we implore you to please offer your support of HB 5074, 5075 and 5076. Please do not allow politics to get in the way of an opportunity for the State of Michigan to once again play an integral part in leading the new economy. If you would like more information or if we can be of any further assistance, please do not hesitate to contact either of us directly.

Sincerely,



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Editorial: State should fix tax code to attract IT jobs

The Detroit News 11:24 p.m. EST November 26, 2015



(Photo: Dale G. Young / The Detroit News)

The \$5 billion data center proposed for the Grand Rapids area gives Michigan another opportunity to make its tax policy competitive for attracting jobs and investment.

Nevada-based Switch says it will build the largest data center campus in the eastern United States if Michigan makes critical changes to how it taxes such technology businesses.

Switch wants to fill the empty pyramid-shaped Steelcase building with 1,000 employees and billions of dollars of computing equipment that will store and process data for some of the world's largest corporations. The company also plans additional construction on the site.

What makes Michigan appealing, says Adam Kramer, executive vice president of strategy for Switch, is the available building, the fact that it is outside earthquake and hurricane zones, has a reliable supply of electrical power, a fiber data infrastructure and the Grand Rapids airport.

And its executives say they really like Grand Rapids.

"We were blown away by the community," Kramer says. "We believe it will be very attractive for our clients, who will be locating workers here."

What doesn't appeal to them? A tax policy that Kramer says is not competitive for the data center industry, a fast growing segment.

Most of Michigan's neighbors, Kramer says, do not charge companies like Switch a sales and use tax on computing equipment, nor do they apply the personal property tax to the equipment once it's installed. Michigan does.

And for a company like Switch, which plans a massive investment in such equipment, that could amount to \$300 million over 10 years. Even the allure of Lake Michigan can't overcome that competitive handicap.

"For a company making a sizable investment, that is a non-starter," Kramer says.

Gov. Rick Snyder has a very tight policy in regards to attracting jobs with tax breaks and credits. It's the right strategy. A tax code should be universally attractive and not bent on a company by company basis.

That approach is what is busting Michigan's current budget, as businesses that were awarded breaks years ago are now cashing them in.

So Snyder should not approve a special deal for Switch, even though its investment in Michigan will be twice as large in terms of dollars than construction of the new Detroit River bridge.

What he should do is fix the tax code for Switch and all businesses like it. Bills pending in the Legislature that could be voted on as early as Dec. 11 would do just that.

Kramer contends that if Michigan lifts the sales, use and personal property tax on data centers, it would trigger an influx of those jobs to the state. He anticipates that companies that do business with Switch will locate operations here once the center is built.

The Snyder administration says it wants to examine the tax code and make adjustments to accommodate Switch and other data center companies, without making the exemption so broad it creates a revenue crunch.

But as Snyder knows from recent experience in Michigan, tax reductions that draw jobs and investment increase tax revenues. The employees hired by Switch and other companies in the industry would pay income taxes, and the company would pay the corporate income tax and other levies.

Other states have already recognized the benefits of not punishing tech companies for making investments in equipment. Michigan should do the same.

Read or Share this story: <http://detroitnews.com/story/11HrhBtP>

Michigan

Huge Grand Rapids-area data center even offers Muskegon opportunities: editorial



[<http://connect.mlive.com/user/muskegoneb/index.html>] By MLive/Muskegon Chronicle Editorial Board

[<http://connect.mlive.com/user/muskegoneb/posts.html>]

on November 22, 2015 at 5:15 AM, updated November 22, 2015 at 5:16 AM

MUSKEGON, MI – "Game-changer" is such an overused cliché that the Switch data center officially announced this past week for the former Steelcase pyramid building near Kentwood would be diminished by such a term.

The plans are for a \$5 billion – yes that is billion with a "B" – 1,000-job and 2 million square-foot data center proposed by a Nevada "cloud computing" owner to serve the eastern half of the United States.

The scope and significance of the colossal economic development project are tough to get the mind around. But it is only a plan at this point, reportedly hinging on state government approval of a tax-incentive program for all data centers in Michigan. The special legislative tax package is expected yet this year. It should also be noted that an education group that had hoped to buy the building recently filed a lawsuit over the failed purchase.

The Switch "Supernap" Michigan data center, if developed, would have West Michigan implications in the region, including for Muskegon County. This is not the time for Grand Rapids jealousies to surface in Muskegon; rather, what is paramount is an open attitude toward everything from regionalism to The Right Place – the Grand Rapids economic development agency that is reeling in Switch.

If Switch builds out its plans for the Steelcase pyramid, Muskegon County needs to be primed and ready to leverage its advantages along the Lakeshore as the economic benefits will spill over to neighboring communities.

Let alone the construction jobs, the high-tech employment base is substantial. No doubt a number of those new, highly paid Switch employees would be attracted to the Lakeshore lifestyle.

Muskegon is in position to attract new residents with its waterfront living, housing values, recreational assets, small town cultural amenities and Lake Michigan sunsets. And a commute time from Muskegon to the Kentwood site is less than an hour.

A typical manufacturing project is said to generate 1.5 jobs for every new industrial job. But a San Francisco Bay Area economic development think tank estimates that high-tech jobs like data centers can create 4.3 additional jobs for every new job.

That could mean another nearly 5,000 jobs for the West Michigan region. How can Muskegon be attractive to those spin-off businesses?

The whole idea of folding our collective arms and hoping something good will happen is not an option, in our opinion. As a community, Muskegon needs to explore opportunities and develop strategies to leverage the potentially great fortune of our Kent County neighbors.

CRAIN'S DETROIT BUSINESS

Detroit and Southeast Michigan's premier business news and information website

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State should weigh merits of tax breaks

Michigan is in contention for a major data center, and it's a big deal — \$5 billion in investment and 1,000 high-quality jobs, according to the projections.

The project would be a 2 million-square-foot center, which its owner, Las Vegas-based Switch, says would be the largest in the eastern U.S. It would be south of Grand Rapids in the former Steelcase Corporate Development Center.

Standing between Michigan and the center, apparently, are tax incentives. Bills have been introduced in the House and Senate that would provide exemptions from certain sales, use and property taxes.

Are the exemptions worth it?

It's hard to tell. HBs 5074-76 and SBs 10-12 have only recently been introduced, and there isn't yet a fiscal analysis. Gov. Rick Snyder has not weighed in.

These types of centers have received a lot of attention and are often highly sought after. But they sometimes do not produce as many jobs as expected, and local communities do not necessarily reap enough tax revenue to compensate for the services provided because of the incentives. Communities that don't have the centers worry that an entire state is subsidizing a benefit for one community.

So, we believe the question should be this: How can everyone win?

The state needs good jobs and, as a Michigan Future report notes (*See story*), the state particularly needs jobs that are part of the information economy.

But local governments have been under stress since the recession, and state policies have helped contribute to that, according to a Michigan State University analysis reported by *Bridge Magazine*.

Swift action may be called for, but it shouldn't take place before strategic thought.

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The economic ripple effect of SuperNAP

Call it an industrial park for the new economy

By [Pat Evans](#)

November 20, 2015

Should Michigan legislators pass the necessary bills, the Switch SuperNAP data center hoping to call the former Steelcase pyramid home would have a much greater economic impact than its \$5 billion worth of equipment.

A SuperNAP data center provides high-quality buildings with high-quality environment controls and network infrastructure to store data equipment for clients, said Jim VanderMey, chief innovation officer and co-founder of Grand Rapids-based Open Systems Technologies, or OST, which has clients that work with Switch.

“It’s almost an industrial park for the new economy,” VanderMey said.

Switch CEO Rob Roy holds hundreds of patents for data center operations and runs a very innovative tech company, VanderMey said.

Switch wants to be in West Michigan, which is why it’s asked the state government for an even playing field.

Three separate bills, simultaneously introduced in both the state House and Senate, would put Michigan on a level playing field with 18 states that already provide property, sales and use tax exemptions for data centers. All the bills only apply to equipment inside the facility. Switch would pay all real property, payroll and income tax.

The bills are not specifically tied to Switch. Essentially, data centers would be treated as another utility, similar to water and electricity. The sales tax exemption, for example, would free data center companies from paying taxes on the products that enable them to host the data within the center, which cost millions of dollars every few years to update. So, if Amazon, a client of Switch, were to purchase \$30 million worth of equipment for use in the center, it would not have to pay the 6 percent sales tax.

“We fell in love with Michigan,” Switch vice president of government and public affairs Adam Kramer told the Business Journal. “It’s a place we can sell our clients on.”

Michigan offers a prime location for a large data center, with a lack of major natural disasters, a mild climate, low power costs and relative proximity to markets such as Chicago and New York City.

The deal, however, is not done. The state legislature must pass the bills with urgency, as Switch is eager to start up a data center east of the Mississippi River. Should politicians delay too long or decide not to pass the bills, the Nevada-based company could look to a state with the policies already in place.

"The company has said they want to be in Michigan all along," said Tim Mroz, vice president of marketing and communications at The Right Place. "That does not mean it's a done deal."

Over the course of 10 years, Switch would invest approximately \$5 billion into the site and buildings around the pyramid. That amount reflects both the data centers and the network infrastructure inside the additional buildings. The proposed development would be the largest and most advanced data center campus east of the Mississippi River.

"I cannot overstate the impact Switch will have on both the Greater Grand Rapids area, as well as the entire state of Michigan," Right Place CEO Birgit Klohs said in a release. "The unparalleled technology and data infrastructure investments planned by Switch will unleash countless new possibilities for growth in our state."

"The future of business will be driven by data, and Michigan will be well positioned as a hub of data innovation," she said.

The 10-year build-out would create "thousands of construction jobs," largely hired from local contractors, as Switch did with its locations in Nevada.

Switch and its more than 1,000 clients will hire approximately 1,000 employees to work on the campus, with a commitment to hiring veterans.

That commitment is evident in the company's precision operations, VanderMey said, including armed guards who walk with guests in the facility that stores sensitive data.

The company's clientele includes eBay, Intel, Shutterfly, Machine Zone, Amgen, Dreamworks, HP, Intuit, Hitachi, JP Morgan Chase, Sony, Boeing, Cisco, EMC, Google, Amazon, Time Warner, Eli Lilly and Fox Broadcasting.

Switch has two SuperNAP centers in Nevada — in Las Vegas and Reno — that have attracted additional development in the state. The Reno center is in the Tahoe-Reno Industrial Park owned by Roger Norman, the man who bought the 87-acre pyramid site from Steelcase in May. Also in the Tahoe-Reno park is Tesla's battery gigafactory, which led to rumors flying when reports of a large tenant tied to Norman potentially calling West Michigan home.

Switch's name might not be as well known as the car company, but its draw is well documented.

"Nobody thought there could be a data center in the desert," VanderMey said. "They've done a great job leveraging the environment to their benefit. It has a lot of ripple effects and has done a lot of good for the region."

In July, Machine Zone Inc., the company behind iPhone's high-grossing "Game of War: Fire Age," announced a \$50 million investment by purchasing 4,000 servers in Switch's southern Nevada location, according to a report in the Las Vegas Sun.

“We are locating our major data operations into the best data center in North America,” Machine Zone Chief Legal Officer Victoria Valenzuela wrote in a letter to the Nevada Governor’s Office of Economic Development board.

In September, the Sun reported Toronto-based Barrick Gold Co., the world’s largest gold mining company, opened its IT and corporate affairs hub in Henderson, Nevada — again, largely because of Switch. The office houses Barrick’s global finance and supply teams.

Barrick President Kelvin Dushnisky told the Sun it also would use Las Vegas’ McCarran International Airport “as a hub for receiving corporate visitors and dispatching employees to mines, spanning from Australia to Peru.”

“We’re already seeing some of that,” VanderMey said, referring to technology companies looking to come to West Michigan. “West Michigan is a design center largely tied to the office furniture industry, but as design and technology move closer together, West Michigan gets more attractive.

“This would be an accelerant.”

While attracting new companies is a major benefit, Mroz also said high-tech talent, of which West Michigan currently has a shortage, might be enticed to stay following college or might choose to come to the area.

“One of the largest benefits will be our ability to retain and attract high-tech talent to the region,” Mroz said.



Pat Evans

Pat Evans is a Grand Rapids Business Journal staff reporter who covers real estate, construction, architecture and design, retail, beverages, food service and agriculture, sports business and county government. Email Pat at pevans at grbj dot com. Follow him on Twitter [@patevans](#)

ALABAMA

This summer, Alabama landed its first big data center project since adopting a 2012 law that exempts those businesses from state and local sales and property taxes. The law offers up to 30 years of tax breaks for data centers investing \$400 million and creating at least 20 jobs with an average annual compensation of \$40,000. Google is projected to get \$81 million of incentives from the state, plus additional local incentives, for a \$600 million facility at the site of a former coal-fired power plant.

ARIZONA

At least 10 companies, including eBay and GoDaddy, have been approved to receive sales tax exemptions for data centers under a 2013 law.

Companies

have claimed at least \$5.5 million in tax breaks so far, although Arizona will not say how much each data center has received. The tax breaks can last 10 to 20 years.

GEORGIA

Georgia offers a sales tax exemption for equipment in data centers investing at least \$15 million annually, and Atlanta ranks among the leading markets for data centers. But the state will not identify which companies have received the tax break and has no totals for how much tax revenue has been waived.

INDIANA

Data centers investing at least \$10 million can receive local personal property tax exemptions on their equipment under a 2009 law. Some data centers also have received state tax breaks, including \$7.5 million of incentives for ExactTarget.

IOWA

Iowa offers sales tax breaks to data centers investing as little as \$1 million, with larger incentives for projects topping \$200 million. It also has no property tax on equipment. Iowa has approved \$41 million in incentives for Microsoft and \$38 million for Google, which have each invested about \$2 billion. Facebook was approved for \$18 million in incentives for its \$300 million data center.

KENTUCKY

A 2010 Kentucky law offers a sales tax refund for computer system equipment for data centers investing at least \$100 million, but no company has used the program. Several smaller data centers have received aid through the state's general incentive programs.

MINNESOTA

Minnesota first enacted a data-center tax break in 2012 and has already expanded it. Data centers of at least 25,000 square feet costing at least

\$30 million can get a 20-year sales tax exemption on equipment and energy and a permanent property tax exemption on equipment. Ten facilities have been certified for the tax break with a projected investment of \$800 million, but the state declined to release how much incentives the companies could receive.

MISSISSIPPI

A 2010 law offers a sales tax exemption on computer equipment for data centers investing at least \$50 million and creating at least 50 jobs paying 150 percent of the average state wage. No data centers have received the incentives.

MISSOURI

A law that took effect in late August offers sales tax exemptions to new data centers investing at least \$25 million and employing at least 10 people in well-paying jobs. Existing data centers can qualify by investing at least \$5 million and adding five well-paying jobs. One company, Bluebird Network, has already cited the new law while announcing a data center expansion in Springfield. Missouri previously provided incentives to some data centers, including LightEdge Solutions in Kansas City, through general economic-development programs.

NEBRASKA

Under a 2012 law, Nebraska offers several tiers of sales and property tax breaks to data centers, starting with those that invest at least \$3 million and employ at least 30 people, or invest at least \$37 million while holding employment steady. Among its headliners is Yahoo, which received at least \$13 million of state incentives and has expanded its operations beyond just a data center. The data-center incentives "kind of gets us in the door with the company," said Mark Norman, of the Greater Omaha Economic Development Partnership.

NEVADA

A law passed earlier this year expanded Nevada's sales and property tax exemptions for data centers. The state is home to data center developer Switch, which provides services to more than 1,000 clients. In July, the state approved an estimated \$229 million of tax breaks for Switch as part of a \$3 billion expansion at sites in Las Vegas and Reno. Nevada previously approved \$55 million in incentives for Apple for a \$400 million cloud-computing data center in Reno.

NEW JERSEY

New Jersey says it has authorized a projected \$134 million in incentives to about a dozen businesses for data-center projects since 2000. The actual amount of incentives received so far is significantly less.

NEW YORK

A law in place since 2000 provides a sales tax exemption for equipment used by Internet data centers, but New York has no estimate of the amount of taxes waived. It also has occasionally provided other incentives to data centers, including almost \$40 million in state and local aid for Yahoo to undertake a \$131 million data center expansion in the western New York town of Lockport.

NORTH CAROLINA

State law provides a sales tax exemption for equipment and electricity used by data centers that invest at least \$150 million in poorer counties or \$225 million in other counties. North Carolina declined to identify the companies getting the tax break but estimated it has waived \$62 million in revenue since 2008. While recruiting Apple in 2009, North Carolina also changed its corporate income tax laws, resulting in a projected \$46 million savings over a decade if Apple invested \$1 billion in its data center.

NORTH DAKOTA

No incentives for data centers have been approved, but North Dakota is hoping that will change. A law that took effect this year provides a sales tax exemption on computer equipment for data centers of at least 16,000 square feet.

OHIO

Since enacting a sales tax break in 2011 for data centers that invest at least \$100 million, Ohio has since lowered the required payroll threshold from \$5 million annually to \$1.5 million. The largest recipient of aid is Amazon subsidiary Vadata, which is projected to get \$81 million in state incentives plus nearly \$20 million in local incentives to invest \$1.1 billion in three data centers near Columbus.

OKLAHOMA

A law dating to 1993 provides a sales tax exemption for equipment bought by businesses engaged in computer services or data processing, as long as most of the revenue comes from out-of-state sales. Oklahoma also offers general incentives. It listed nearly \$29 million of approved incentives for six data centers, but most of those projects were terminated, often for failing to meet benchmarks.

OREGON

There is no sales tax in Oregon, which benefits data centers. Companies also can receive property tax exemptions through local enterprise zones.

State reports show data centers have received \$159 million in property tax breaks. That includes \$111 million for Google, \$32 million for Facebook and nearly \$11 million for Vadata. Those figures are expected to grow as data centers continue to expand.

SOUTH CAROLINA

A law offers a sales tax exemption on computer equipment and electricity used in data centers that invest at least \$50 million and employ at least

25 people in well-paying jobs. Google has announced investments of \$1.2 billion in its South Carolina data centers, but the state says it has no estimate of the tax breaks.

TENNESSEE

A state law offers sales tax breaks on computer equipment and electricity for data centers that invest at least \$250 million. The state declined to say how much revenue has been waived through that program. It also has offered other general incentives to data center projects, including \$2.3 million for Nashville-based health care provider HCA.

TEXAS

A 2013 law offers a sales tax exemption on equipment and electricity for data centers that contain at least 100,000 square feet, invest at least \$200 million and employ at least 20 people at above-average wages. The Texas comptroller's office says five data centers have qualified, including ones run by Microsoft, LinkedIn and State Farm. But it says the amount of sales taxes waived is not reported.

UTAH

Utah has made use of its general incentive programs to lure a variety of data centers. It has approved a projected \$143 million in incentives for data centers that are expected to invest a total of nearly \$1.2 billion.

That includes \$40 million in incentives for Adobe Systems, \$32 million for Xactware Solutions, \$27 million for eBay and \$15 million for Oracle.

VIRGINIA

Northern Virginia, just outside Washington, D.C., is one of the top spots nationally for data centers. The state has updated its sales tax exemptions for data centers several times in recent years. Last year alone, Virginia waived an estimated \$48 million in state and local sales tax revenue for data centers. The state

lists more than 60 data centers eligible for the sales tax break with a combined investment of \$5.8 billion. Companies benefiting include Facebook, Microsoft, Ticketmaster, Bank of America, Capital One, Visa and the Amazon subsidiary Vadata.

WASHINGTON

About a decade ago, Microsoft and Yahoo began building data centers in rural Washington, due partly to affordable hydropower from the Columbia River. Since then, Washington has enacted a sales tax exemption and updated it several times to keep pace with competition from other states.

Among the companies approved for the tax break are Microsoft, Dell and Costco. But Washington has not disclosed how much of a tax break they received.

WEST VIRGINIA

Data centers can receive both a sales tax exemption and a property tax break on equipment. West Virginia declined to disclose the identities of the companies receiving the breaks. The revenue department said 29 entities received the property tax break but described the impact on revenue as "marginal" – about \$170,000 per year.

WYOMING

A 2011 law offers data centers that invest at least \$5 million a sales tax exemption on computer equipment. Data centers that invest at least \$50 million also can get a sales tax break on power supplies and cooling equipment. The biggest beneficiary has been Microsoft, which is projected to receive \$17 million in incentives while investing \$355 million in its data center.

